

# EXHIBIT C

The New York Times

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## *Asthma Is Absent Among Top Covid-19 Risk Factors, Early Data Shows*

Despite warnings that asthmatics were at higher risk for severe illness from the coronavirus, asthma is showing up in only about five percent of New York State's fatal Covid cases.



By **Danny Hakim**

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For people with asthma, the outbreak of a pandemic that can lead to respiratory failure has not been a welcome event. Many health organizations have cautioned that asthmatics are most likely at higher risk for severe illness if they get the coronavirus. There's been a run on inhalers, and coronavirus patients like the actor Idris Elba have openly worried about their asthma.

But this month, when New York State, the epicenter of the outbreak in the United States, began releasing data on the top 10 chronic health problems suffered by people who died from coronavirus, asthma was notably absent from the list. State officials said only about five percent of Covid-19 deaths in New York were of people who were known to also have asthma, a relatively modest amount.

The research at this early stage is minimal and not always consistent, as one would expect. A recent commentary published in *Lancet* by a group of European researchers called it “striking” that asthma appeared “to be underrepresented in the comorbidities reported for patients with Covid-19” — comorbidity being the term for a secondary health problem. A small study of 24 critically ill patients in Washington State noted that three had asthma.

“We’re not seeing a lot of patients with asthma,” said Dr. Bushra Mina, a pulmonary and critical care physician at Lenox Hill Hospital in New York City, which has treated more than 800 Covid cases. The more common risk factors, he added, are “morbid obesity, diabetes and chronic heart disease.”

The top Covid-19 comorbidities listed by New York, in order, are hypertension, diabetes, high cholesterol, coronary artery disease, dementia and atrial fibrillation, a heart condition. Chronic obstructive pulmonary disease, another respiratory ailment, but one with an older demographic than asthma, ranks seventh. Renal disease, cancer and congestive heart failure round out the list.

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Nearly eight percent of the U.S. population — close to 25 million people — has asthma, according to the Centers for Disease Control and Prevention. It is a lung disease that causes the airways to constrict and can make breathing hard work as the body fights for enough oxygen. Symptoms include wheezing and coughing.

One thing doctors agree on is that people with asthma should be taking long acting medications like steroids that keep their symptoms in check, because having your asthma under control is better than battling asthma and a virus simultaneously.

Health experts have generally seen little to no evidence that asthma increases the risk of developing Covid-19, but the question has been whether it causes worse outcomes for those who do have it.

“If you have mild or moderate disease, you’re probably not going to behave much differently than someone who doesn’t have asthma, particularly if you’re a younger person,” said Dr. David Hill, a board member of the American Lung Association. But he added that those with more severe cases “may get more severity of the disease.”

Dr. Linda Rogers, a specialist in pulmonary medicine at the Mt. Sinai Health system, which is on the front line of Covid treatment, said one would assume that patients with underlying lung diseases would be “at risk of worse outcomes.” But she said that “asthma is underrepresented” in patients that are sick enough to seek treatment.

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Her practice focuses on people with more serious cases of asthma, but she has been able to successfully manage many of her asthma patients through telemedicine. “These are patients who, just based on their asthma alone, are on steroids all the time. I’m just surprised some of them haven’t done worse.”

Still, the data analysis on the effects of asthma is in its infancy, and health experts cited an existing body of research that shows the flu and milder coronaviruses exacerbate asthma as worrisome indicators for those with Covid-19. Dr. Rogers said that she did not want to exclude asthma “as a potential problem as it is well known that viral infections are the No. 1 cause of asthma flares in both children and adults under normal conditions.”

Dr. J. Allen Meadows, president of the American College of Allergy, Asthma and Immunology, said much the same: “Since common coronaviruses in the United States, and influenza, trigger asthma flares in well controlled patients, we might expect Covid-19 to be similar.”

One doctor who has studied viruses extensively is Young J. Juhn, a clinical epidemiologist, and professor of pediatrics and medicine at the Mayo Clinic, whose laboratory research has examined the impact of asthma on the risk of infectious and inflammatory diseases.

Dr. Juhn said the data would have to be studied and weighted in more detail, but added that, in his view, asthma put people at greater risk of poor outcomes, and potentially even more susceptible to infection, though there was limited data on the latter point. He noted that asthma disproportionately affects lower-income people who have less access to Covid testing and care.

“It may be still fair to say that the emerging data support the current guidelines considering asthma as a high-risk condition,” he cautioned, adding that “we need more definite data.”

**The Coronavirus Outbreak** >

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This is a difficult question, because a lot depends on how well the virus is contained. A better question might be: “How will we know when to reopen the country?” In an American Enterprise Institute report, Scott Gottlieb, Caitlin Rivers, Mark B. McClellan, Lauren Silvis and Crystal Watson staked out four goal posts for recovery: Hospitals in the state must be able to safely treat all patients requiring hospitalization, without resorting to crisis standards of care; the state needs to be able to at least test everyone who has symptoms; the state is able to conduct monitoring of confirmed cases and contacts; and there must be a sustained reduction in cases for at least 14 days.

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